Linzer biol. Beitr.	37/1	701-705	25.7.2005

Tiphotrephes immaculatus sp.n. (Heteroptera: Helotrephidae: Limnotrephini), a new species from Viet Nam

M. PAPÁČEK & H. ZETTEL

Abstract: *Tiphotrephes immaculatus* sp.n. from Viet Nam is newly described. *Tiphotrephes indicus* (DISTANT 1911) is recorded from Viet Nam for the first time.

Key words: Helotrephidae, Limnotrephini, *Tiphotrephes*, new species, new record, Viet Nam.

Introduction

A small collection of Helotrephidae from Viet Nam, which was given to the junior author by Mr. Tran Anh Duc, National University of Singapore, yielded a series of a new species of *Tiphotrephes* ESAKI & CHINA 1928. Hither-to, this genus contained only one species, *T. indicus* (DISTANT 1911), which is common and widely distributed from India to the Malay Peninsula and to Borneo (DISTANT 1911, POLHEMUS 1990, ZETTEL 1995, 2001, PAPÁČEK & ZETTEL 2003) and now also known from Viet Nam. Therefore, the discovery of an undescribed species of *Tiphotrephes* was surprising.

Terminology and methods follow strictly PAPÁČEK & ZETTEL (2003).

Tiphotrephes immaculatus sp.n. (Figs 1-6, 8)

Type material: Holotype (brachypterous male) and paratypes (4 brachypterous males, 2 brachypterous females, 1 macropterous female) labeled "Vietnam, Ninh Binh Pr.\ Gia Vien, Van Long\ Wetland Nature Reserve\ 7 JUNE 2003\ leg. Tran A.D., TAD0347"; all specimens dry mounted and glued on cards, dissected parts glued on the same card as the specimen; holotype and four paratypes in the Natural History Museum Vienna; one male and one female paratype in the Zoological Reference Collection, Raffles Museum for Biodiversity Research, National University of Singapore; one male paratype in Coll. Papáček, České Budejovice.

Description: Body length of micropterous male 1.20-1.26 mm (holotype: 1.24 mm), of micropterous female 1.30-1.32 mm, of macropterous female 1.28 mm; maximal body width (= cephalonotal width) of micropterous male 0.80-0.83 mm (holotype: 0.83 mm), of micropterous female 0.87-0.88 mm, of macropterous female 0.94 mm; eye index (= minimum eye distance : maximum eye width) of micropterous male 2.3-2.6 (holotype: 2.4), of micropterous female 2.5-2.6, of macropterous female 2.3.

Colour: Head, prothorax, mesoscutellum and hemielytra mainly unicolourous, yellow;

only in some specimens frontoclypeal area with two variably shaped, elongated, brownish coloured, larger marks and a few, irregularly distributed, small, brownish dots and dashes; black mesonotal "disc" visible through translucent posterodorsal part of cephalonotum in some specimens; black abdominal tergites also visible through tiny "cells" of hemielytra in some specimens. Venter of pterothorax and abdomen mat-black; legs yellow.

Structural characteristics: All parts of dorsum shining; cuticular pits with minute setae, pits extremely fine and sparse on head, sparse, relatively large and shallow on pronotum and mesoscutellum, and relatively dense, large and deep on hemielytra; hemielytral "cells" distinct. Rostrum stout, reaching posteriad approximately to middle of metasternal carina, segment 4 ca. 2.0 times as long as segment 3. Midventral carinae (Fig. 6): Prosternal carina with very sharp, approximately rectangular posteroventral corner; mesosternal carina low; metasternal carina with spine-like posteroventral corner; carinae of abdominal sterna 2 - 5 of normal shape, acute, gradually decreasing in size from 2 to 5, carina of sternum 5 minute or indistict in female.

Macropterous morph: Pronotum laterally with more distinct puncturation and with slightly elevated areas in posterolateral corners above wing insertion. Claval suture present. Colour and eye size approximately the same as in micropterous morph.

Genitalia of male: Aedeagus short and robust; its apex nearly triangular; posteroapical carina with simple, round margin (Fig. 1), with minute lobe in some specimens (Fig. 2), anteriorly with a quadrangular projection of the phallosoma directed to the left side and apicad (not observed in all males); left paramere (Fig. 3) anterioapically hook-shaped, posterobasally with round, semicircular dilatation. Right paramere only slightly curved anteriad, apically round (Fig. 4).

Subgenital plate of female (= abdominal sternum 7; Fig. 5) subsymmetrical, with one posteromedial and two posterolateral lobes, the latter mesally partly covered by posteromedial one. Hind margin of posteromedial lobe slightly asymmetrical, roundish to subquadrangular; left posterolateral lobe posteriorly slightly acute, right one rounded. Brownly pigmented area of sclerite expanding to anterior part of posteromedial lobe.

Comparative notes: *Tiphotrephes immaculatus* sp.n. well agrees in the diagnosis given for *Tiphotrephes* by PAPÁČEK & ZETTEL (2003: 230). The type series can be immediately distinguished from *T. indicus* in the yellow colouration of the dorsum without numerous small brown dots. Genitalia of the males differ as follows: The aedeagus of *T. immaculatus* sp.n. is lacking an acute posteroapical bilobate carina (Figs 1, 2), which is present in *T. indicus* (see PAPÁČEK & ZETTEL 2003: figs 64-66); the left paramere of *T. immaculatus* sp.n. has the posterobasal part rounded (Fig. 3), but in *T. indicus* it is distinctly squared (see PAPÁČEK & ZETTEL 2003: fig. 67); the right paramere of *T. immaculatus* sp.n. is distally more slender and curved (Fig. 4) than in *T. indicus* (see PAPÁČEK & ZETTEL 2003: figs 68). The subgenital plate of *T. immaculatus* sp.n. (Fig. 5) differs from this sclerite of *T. indicus* especially by the slightly acute posterior margin of the left posterolateral lobe (round in *T. indicus*) and by extent of dark pigmented area of the sclerite (in *T. indicus* not onto posteromedial lobe). Both sexes of *T. immaculatus* sp.n. can be also recognized by the spine-like posteroventral corner of the metasternal carina (Fig. 6), which is acute, but short in *T. indicus* (Fig. 7).

Distribution: Only known from the type locality, the Van Long Wetland Nature Reserve in Gia Vien, Ninh Binh Province, northern Viet Nam.

Habitat: The habitat of *T. immaculatus* is in a wetland, some kind of open, not very deep lake (Fig. 8) with very transparent water and with a lot of aquatic vegetation (Tran A.D., pers. comm.). The habitat appears very similar with some places where *T. indicus* has been collected.

Etymology: The specific epithet refers to the colouration of the species' dorsum, which is without the numerous dark dots typical for *T. indicus*.

Tiphotrephes indicus (DISTANT 1911) (Fig. 7)

Additional material examined: 1 brachypterous male and 1 brachypterous female labeled "Vietnam, Dong Nai Pr.\ Vinh Cuu, Ma Da,\ Bo Hao Lake, 6 MAY 2003\ leg. Tran A.D., TAD0309"; 1 macropterous female "Vietnam, Dong Nai Pr.\ Vinh Cuu, Ma Da,\ Ma Da stream (13 km NE\ Rang Rang), 7 MAY 2003\ leg. Tran A.D., TAD0311"; specimens in the Natural History Museum Vienna and in the Zoological Reference Collection, Raffles Museum for Biodiversity Research, National University of Singapore.

Notes: *Tiphotrephes indicus* has been recently discussed and the variability of its terminalia has been illustrated by the authors (PAPÁČEK & ZETTEL 2003: figs 64-70*). The midventral carinae have been illustrated earlier by ESAKI & CHINA (1928: fig. 8e). For comparison with *T. immaculatus* sp.n., an illustration of these structures is presented in Figure 8. First record from Viet Nam!

Acknowledgements

We are very much obliged to Mr. Tran Anh Duc (National University of Singapore) for making available the specimens for this study. This study was carried out during a research visit of the senior author to the International Research Institute of Entomology at the Natural History Museum Vienna granted by the EU (Synthesys Research Project AT-TAF 126).

Zusammenfassung

Tiphotrephes immaculatus sp.n. aus Vietnam wird neu beschrieben. *Tiphotrephes indicus* (DISTANT 1911) wird erstmals aus Vietnam nachgewiesen.

References

DISTANT W.L. (1911): The fauna of British India, including Ceylon and Burma. Rhynchota Vol. V. Heteroptera: Appendix. — Taylor and Francis, London, XII + 362 pp.

ESAKI T. & W.E. CHINA (1928): A monograph of the Helotrephidae, subfamily Helotrephinae (Hem., Heteroptera). — EOS, Revista española de entomologia 4: 129-172.

PAPÁČEK M. & H. ZETTEL (2003): On the species taxonomy of the limnotrephine genera *Limnotrephes*, *Mixotrephes*, and *Tiphotrephes* (Hemiptera: Helotrephidae). — Tijdschrift voor Entomologie 146 (2): 219-234.

*Fig. 70 (see PAPÁČEK & ZETTEL 2003) illustrating the female subgenital plate of *T. indicus* is mistakenly viewed from the internal side, but diagnostic characters of this sclerite are presented correctly.

POLHEMUS J.T. (1990): A new tribe, a new genus and three new species of Helotrephidae (Heteroptera) from Southeast Asia, and a world checklist. — Acta Entomologica Bohemoslovaca **87**: 45-63.

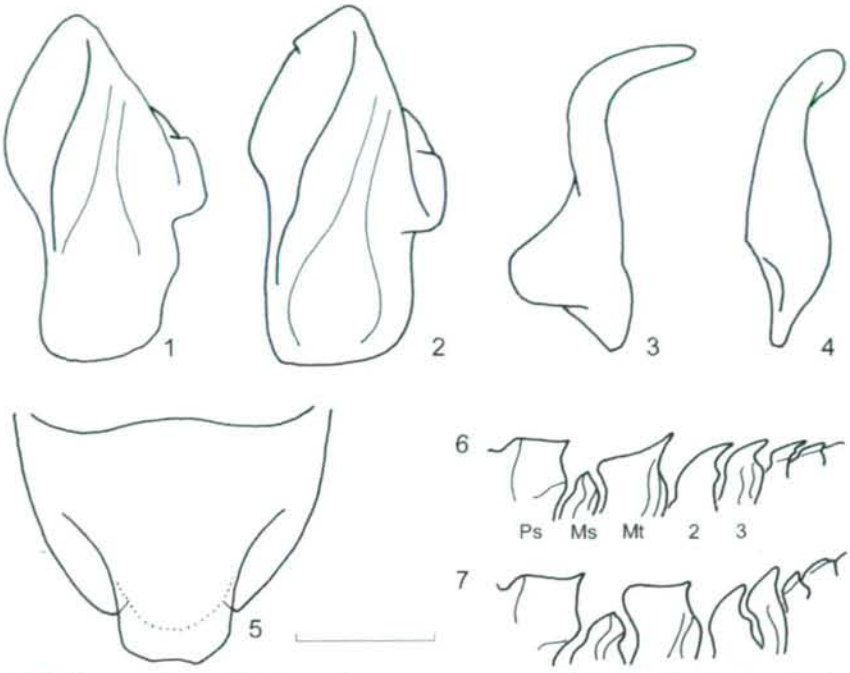
ZETTEL H. (1995): Neue Arten der Gattung *Distotrephes* POLHEMUS, 1990, aus China und Borneo sowie faunistische Notizen zu anderen Limnotrephini (Insecta: Heteroptera: Helotrephidae). — Annalen des Naturhistorischen Museums in Wien **97 B**: 159-168.

ZETTEL H. (2001): First notes on the Helotrephidae (Heteroptera) of Kalimantan Barat, Indonesia: descriptions of three new species of *Hydrotrephes*, and first records of *Tiphotrephes* from Borneo. — Entomological Problems **32**: 59-64.

Authors' addresses:

Prof. Dr. Miroslav PAPÁČEK
University of South Bohemia
Pedagogical Faculty
Jeronýmova 10
CZ-371 15 České Budejovice, Czech Republic
E-Mail: papacek@pf.jeu.cz

Dr. Herbert ZETTEL
International Research Institute for Entomology
Natural History Museum
Burgring 7
A-1010 Vienna, Austria.
E-Mail: herbert.zettel@nhm-wien.ac.at



Figs 1-7: Characteristics of *Tiphotrephes immaculatus* sp.n. (1-4, 6: male; 5: female): (**1, 2**) aedeagus; (**3**) left paramere; (**4**) right paramere; (**5**) subgenital plate, ventral aspect; (**6**) midventral carinae, lateral aspect, venter turned upward. Ps, Ms, Mt – pro-, meso-, metasternum; 2, 3 – abdominal segment 2, 3. Doted line indicates posterior margin of darkly pigmented area of the sclerite. **Fig. 7**: Midventral carinae of *Tiphotrephes indicus*, same aspect.
Scale bar = 0.1 mm (Figs 1-4), = 0.135 (Fig. 5); = 0.2 mm (Figs 6, 7).

Fig. 8: Habitat of *Tiphotrephes immaculatus* sp.n. in the Van Long Wetland Nature Reserve, northern Viet Nam (photo: Tran Anh Duc).